All Kerala Govt. Ayurveda College Teacher's Association
KERALA JOURNAL OF AYURVEDA
An International Journal of Ayurveda Specialties

Vol 2(2): 01–04 (2023)
https://doi.org/10.55718/kja.149

CASE REPORT

Ayurvedic Management of Intra Uterine Growth Restriction; A Case Report

[1]Asha S.T, [2]Shiny S Raj, [3]Namitha V Haridas, [4]Athiralekshmi S.V, [5]Sharon Sebastian.

[1]Professor and HOD, [2]Associate Professor, [3,4,5]Assistant Professor, Government Ayurveda College, Pariyaram, Kannur.

*Email: prasuthidepartmentkannur@gmail.com

ARTICLE HISTORY

Received: 18 March 2023
Accepted: 06 June 2023

Available online
Version 1.0 : 30 June 2023

Keywords

Garbhasosha, Intrauterine growth restriction, *Ksheerapaka*

Additional information

Peer review: Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

Reprints & permissions information is available at https://keralajournalofayurveda.org/index.php/kja/open-access-policy

Publisher's Note: All Kerala Govt. Ayurveda College Teacher's Association remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

CITE THIS ARTICLE

Asha S.T, Shiny S Raj, Namitha V Haridas, Athiralekshmi S.V, Sharon Sebastian. Ayurvedic Management of Intra Uterine Growth Restriction; A Case Report. Kerala Journal of Ayurveda. 2023; 2(2): 01-04 https://doi.org/10.55718/kja.149

Abstract

Intra-uterine growth restriction is one of the serious dilemmas affecting pregnant women worldwide. It can be considered when the birth weight of the foetus is below the 10th percentile of the average for the gestational age. 3% to 7% of all pregnancies may be affected by foetal growth restriction. In this present case, a primi gravida with antenatal ayurvedic check-up was diagnosed with mild IUGR. Initially, the Doppler parameters of the uterine artery were elevated with decreased liquor. Through timely intervention, the mild IUGR was managed successfully by adopting *garbhasosha chikitsa*. Thus, the decreased growth potential of the foetus was improved, preventing the chance of developing severe IUGR and she delivered a healthy female baby through LSCS.

Introduction

Intra-uterine growth restriction is a major scenario worldwide as individuals born as growth retarded babies are having various other co-morbidities during adulthood. It can be defined as the inability of the foetus to achieve genetic growth potential due to a negative environment in the uterus during pregnancy [1]. 3% to 7% of all pregnancies may be affected by foetal growth restriction. When the birth weight of the foetus is below the 10th percentile of the average for the gestational age it can be considered as Intra Uterine Growth Retardation (IUGR)[2]. It occurs due to restriction in the growth pattern of the foetus corresponding to gestational age which may result in adverse foetal outcomes. Such infants are at risk of neonatal mortality and co -morbidities. Poor maternal nutrition, social deprivation, foetal infections, chronic hypoxia, anaemia, utero-placental insufficiencies congenital anomalies etc., can be a cause of developing foetal growth retardation. Maternal malnutrition before and during pregnancy is the most prevalent cause of growth retardation. Uterine fundal height, ultrasonic measurements and Doppler velocimetry are used to diagnose such conditions in-utero [3].

The terms IUGR and small for gestational age (SGA) are used synonymously, but both are different. Estimated foetal weight (EFW) is calculated by gestational age to diagnose the presence of decreased growth potential in the foetus. EFW between the 3rd to 9th percentile is a moderate category and that less than the 3rd percentile is a severe category IUGR. Also, other parameters like AC, HC, FL, Doppler, etc. are used to diagnose IUGR or

its probability of developing foetal growth retardation. All growth parameters are proportionally reduced in symmetrical variety whereas asymmetric growth retardation can be seen in asymmetric IUGR (AC is reduced compared to others). Asymmetric IUGR constitutes 70%-80% of all cases [4]. Foetal growth retardation is confirmed if any of the below parameters are present≤ 32 weeks of gestation. It includes;

An abdominal circumference <3rd percentile or an estimated foetal weight <3rd centile

No end-diastolic flow in the umbilical artery

An abdominal circumference/estimated foetal weight ratio <10th centile combined with a pulsatility index (PI) >95th centile in the umbilical and/or uterine artery) [5].

The foetus with growth restriction has to make adjustments in their hormonal and metabolic requirements to tolerate the adverse uterine environment.

In Ayurvedic classics, foetal growth restriction can be understood under various terms like *Vatabhipanna garbha, Garbhasosha, Upavishtaka, Nagodara and Leenagarbha*. *Acharya Vagbhata* and *Acharya Susruta* explained *Garbhasosha,* where *vata* vitiation causes *rasakshaya* which in turn results in foetal emaciation leading to growth retardation. *Acharya Susruta* explains that when the foetus is afflicted by *vata*, proper growth is arrested and is termed as *Vatabhipanna garbha/garbhsosha*[6]. The line of treatment mentions the use of milk decoctions made of *brimhaniya oushada, mamsarasa, grita* and *brimhaneeya aahara*.

Case report

Presenting complaints with a history

A primigravida with 21 weeks of gestation came for a regular antenatal visit found to have fundal height less than a period of gestation on obstetrical examination.

A 25-year-old non- hypertensive non-diabetic primigravida married since 1year (non-consanguineous marriage) came to tertiary care Ayurveda Hospital on 21/04/2022 with her UPT positive and her last menstrual period dated 06/03/2022. Her menstrual history revealed regular cycles with 4 to 5 days of bleeding in 28 to 30 days intervals. The obstetric history was G1P0L0A0 and was not using contraceptives since marriage, without a history of dyspareunia. She had a moderate appetite with regular bowel and sound sleep.

Diagnostic Concerns

Routine antenatal investigations were done at her first visit and were within normal limits. She was advised for regular antenatal check-ups and obstetric scans timely. She failed to do the NT scan because she missed one antenatal visit and visited the sonologist after 2 weeks after the advised date given for the NT scan. She was taking regular folic acid supplementation since conception and started iron and calcium supplementation in the second trimester. She was immunized with 2 doses of TT vaccination. In the first trimester, she had nausea and vomiting and had taken ayurvedic medication for that. After the first trimester, she felt more fatigue and tiredness.

She visited for a check-up on 30/07/22 (20th week), during obstetrical examination fundal height was 2 weeks less than the actual period of gestation and medicines were prescribed accordingly. The patient was suggested to do an anomaly scan. In the scan foetal anatomical survey was found to be within normal limits. The amniotic fluid was found to be less (1 pocket= 5cm). An umbilical artery had the Pulsatility Index of 1.56 and a Resistance index of .81 with an S/D of 5.27 suggestive of decreased diastolic flow velocity of blood through the umbilical artery. The Abdominal circumference: Head circumference ratio was 1.3(just above the upper limit). Thus, parameters showing the probability of developing severe IUGR were diagnosed during that period.

Obstetric examination

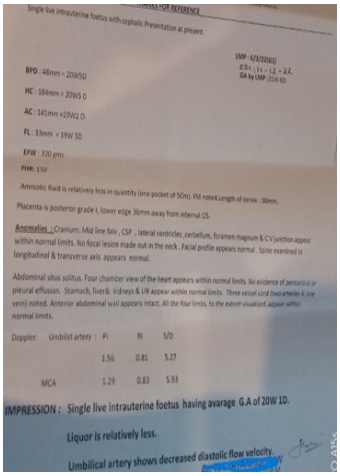
Date	POG	Weight	B. P	Fundal height	FHR	Fetal Movements	Hb%	Urine
21/4/22	6W 4D	63 kg	114/70mmhg	-	-	-	11.6g/dl	Albumin,sugar-nil Pus cell – 1-2/HPF Epi cell- 2-4/HPF
19/05/22	10W 4D	64 kg	110/72mmhg	-	-	-	-	-
30/07/22	20W 6 D	65 kg	112/70 mmHg	18 weeks	140bpm	+	-	-
06/08/22	21W 6D	65.2 kg	108/72mmhg	19 weeks	142bpm	+	-	-
09/09/22	26 W 5D	68.7kg	101/65mmHg	24 weeks	147bpm	+	-	-
13/09/22	27W 2D	69 kg	106/68mmhg	24 weeks	149 bpm	+	-	-
5/10/22	30 W 3D	72.2 kg	125/70mm hg	30 weeks	150bpm	+	-	-
17/11/22	36W 4D	74 kg	118/74 mmHg	36 weeks	148bpm	+	11.9g/dl	Alb- nil Sugar-nil Pus cells- 3-5 Epi cells- 2-4

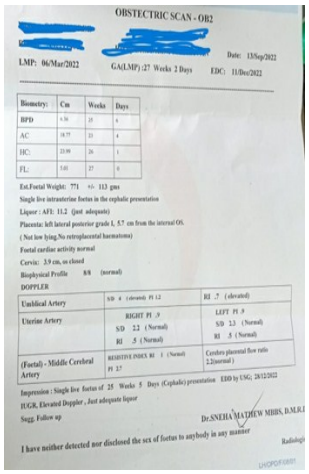
Ultrasound scan findings

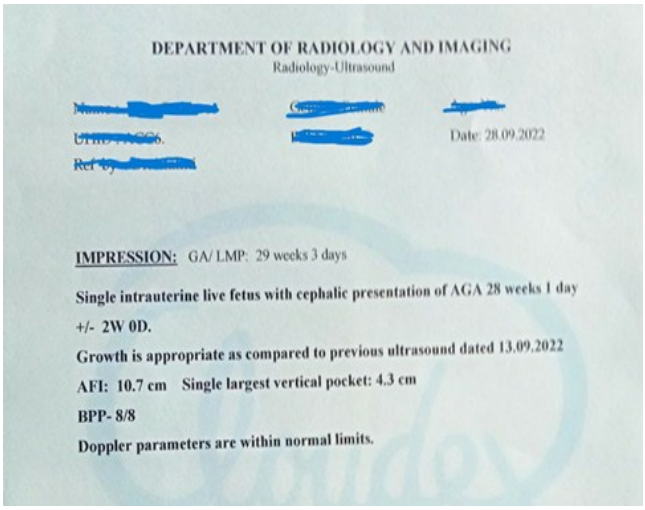
Date	GA by LMP	GA by USG	Findings	HC: AC	EFW	FHR	AFI
29/04/22	7W 5D	5W 2 D	Early intrauterine pregnancy, CRL- 5mm, No Cardiac flicker	-	-		-
19/05/22	10W 4D	9W 2D	Single live intrauterine embryo, CRL- 21 mm SLIU foetus.		-		-
6/08/22	21W 6D	20W 1D	Liquor is relatively less. The umbilical artery shows decreased diastolic flow velocity.	1.3	320 g	150 bpm	-
13/09/22	27W 2D	25W 5D	SLIU foetus with cephalic presentation IUGR Elevated Doppler, just adequate liquor	1.2	771+/-113 g	Normal	11.2cm
28/09/22	29W 3D	28W 1D	SLIU foetus with cephalic presentation Growth is appropriate BPP=8/8	1.1	1142+/-171g	142 bpm	10.7cm
17/11/22	36W 4D	34W 5D	Doppler parameters within normal limits SLIU active foetus with a cephalic presentation, BPP- 8/8,	1.1	2304gms+/-336 gms	143bpm	10.8cm

Therapeutic concerns

Date	Clinical findings	Treatment given	Duration	Remarks
30/07/22	Fundal height 2 weeks less than POG	*Balaksheerapakam* 50ml twice daily before food Dietary modification – *ksheera, navaneetha, kushmanda, mudga yusha*	1 week	Advised to take a scan
06/08/22	Fundal height less than POG, Liquor is relatively less. The umbilical artery shows decreased diastolic flow velocity	*Satavari,bala ksheerapakam* 50 ml twice daily before food Dietary modification – protein-rich diet considering *agnibala*	2 weeks	Advised for next visit after 2 weeks
20/08/22	The patient failed to visit the OPD but was continuing the medicines regularly			
13/09/22	Fundal height just above the umbilicus USG shows elevated Doppler with mild IUGR	*Satavari,bala, ashwagandha ksheerapakam* 50 ml twice daily before food *Mahadhanwantaram* tab-1 twice daily *Phalasarpis* -1 teaspoon twice daily	2 weeks	Visit after 2 weeks with a scan
05/10/22	Fundal height corresponding to 30 weeks	USG Confirms SLIU foetus with a cephalic presentation, appropriate growth and normal Doppler.		







Result

After the above-said treatment, the growth of the foetus was normal with Doppler parameters within normal limits in the obstetric scan dated 28/09/22. The patient delivered a healthy female baby of birth weight of 2.87 kg with an APGAR score of 9 through LSCS on 24/12/2022.

Discussion

Suboptimal intrauterine growth retardation affects 10% of all pregnancies and the outcome depends upon the severity of IUGR. In this case, USG Doppler indicated decreased velocity of blood flow earlier in the 21st week of gestation onwards and management started from there on. The condition was understood as *garbhasosha* described by *Acharya Susruta* in *Garbhineevyakaranam adhyaya*[7]. In this patient, she had a history of nausea, vomiting and tiredness up to her 5th month of pregnancy. It affects the *rasadhatu* formation and along with it, *vata* vitiation hampered the proper flow of *rasadhatu* through *garbhanadi* leading to decreased growth potential in the foetus. *Garbhasosha* also termed *vatabhipanna garbha* occurs here due to this reason. The treatment for it is the use of *brimhaneeya oudhadha* accordingly. So, during the ayurvedic antenatal check-up, she was advised *ksheerapaka* regularly from the 21st week of gestation onwards when a decreased velocity of blood flow was identified in USG. Due to that a chance of developing severe IUGR was prevented. And the scan was done on the 27th week of gestation again showing elevated Doppler with mild IUGR. So, the medicines were changed and she was given *satavari bala ashwagandha ksheerapaka* with *mahadhanwantaram gulika* and *phalasarpi* 1 teaspoon twice daily for 2 weeks. Along with *ksheerapakas* and *ghritas*, dietary advice like eggs, fleshy vegetables, fruits and milk in daily diet were advised as they are anabolic. Thus, this condition was reversed.

Shatavari (Asparagus recemosus) is *brimhana, rasayana, garbhaposhana, balya, pushtiprada, and vataprasamana* which supports growth potential in the foetus[8]. *Bala* (Sida cordifolia) is *madhura* in *rasa* and *vipaka, laghu snigdha*, and is *brimhaneeya, prajasthapana, balya* and *vatasamana*[9]. *Aswagandha* (Withania somnifera) is *snigdha*, *laghu, tridoshasamaka, rasayana, balya* and *brimhaneeya*. Hence *satavari, ashwagandha* and *bala* were given as milk decoction 50 ml twice daily. Anabolic and rejuvenating properties of these drugs increase the blood flow to the foetus, thereby reversing the chance of growth retardation in-utero. *Phalasarpis* promotes nourishment to the uterus as it is *aayushyam, poushtikam* and *rasayanam*.[10]*Mahadhanwantaram gulika* is also known as *garbharakshini* as it supports and protects the pregnancy. It is proven that lipophilic substances can cross the placental barrier and counteract the chance of growth restriction. Hence the use of milk decoction and *grita* etc reaches the foetal circulation by crossing the placental barrier and improves the growth potential of the developing foetus. All the 3 sets of medications pacified the *vata* and promote appropriate growth of the foetus.

Conclusion

From the above case study IUGR can be taken as *garbhasosha* resulting from improper functioning of *rasadhatu* and the planned management reversed the possibility of developing severe IUGR in pregnancy. Regular obstetric examinations helped to diagnose this condition early and were successfully managed with specific ayurvedic treatment modalities. Hence other ayurvedic medicines mentioned in this context can be taken for further research studies related to IUGR.

References

1. J.B.Armengaud,C.Yzydorczyk, B Siddeek; Intrauterine growth restriction: clinical consequences on health and disease at adulthood; reproductive toxicology;volume99, January 2021. Pages 168-176
2. Hiralal Konar, DC Dutta's Textbook of Obstetrics 9th edition; Jaypee publishers; chapter 32, page no 533
3. F.Gary Cunningham, Kenneth J Leveno, Steven L.Bloom, John C Hauth, Larry C Gilstrap Williams Obstetrics; 22nd edition, McGraw-Hill Medical Publishing Division; chapter 38, page no-894-900
4. Li Chi Chew; Rita P. Verma; Fetal Growth Restriction; stat-pearls publishing, treasure island;Jan 2022
5. Intrauterine Growth Restriction: New Insight from the Metabolomic Approach;Elena Priante, Giovanna Verlato, Giuseppe Giordano,Matteo Stocchero, Silvia Visentin, Veronica Mardegan,and Eugenio Baraldi
6. Vagbhata, Arunadatta, edited by Pt.HariSadasivaSastriParadakara. Astangahrdaya,chikitsasthana Sarvangasundara commentary. Varanasi; Chaukamba Sanskrit santhana ; 2010.chapter-21,sloga no- 21
7. Acharya PriyamvadaSharma, Susrutha Samhita, Sareerasthana;Dalhanaacharya, Nibhandasangraha commentary Ninth edition,Varanasi; Chaukhambha Orientalia; 2007.chapter-10; sloga no-57
8. P.V .Tiwari;Kashyapa Samhita; Vridhajivakiya tantra;kalpasthana; Kalpasthana; Chapter 5; satapushpasatavaree kalpa adhyayam;s loga no-7-8;pageno-348
9. Dr. S.D.Kamat; Bhavaprakasa Nighantu 28thedition; Choukhambha Sanskrit Pratishthan, Delhi, slogan- 142-144 page- 381
9. Vagbhata, Arunadatta, edited by Pt.HariSadasivaSastriParadakara. Astangahrdaya, utharasthana Sarvangasundara commentary. Varanasi; Chaukamba Sanskrit santhana ; 2010.chapter-34, sloga no-62-66

§§§